

ABSTRACT OF THE INVENTION

The present provides structurally related enzymes that act as enoyl reductases. These enoyl reductases share a common amino acid consensus sequence, and bind a flavin 5 cofactor. One particular enoyl reductase provided, FabK, catalyzes the identical reaction as the NADH-dependent enoyl-ACP reductase, FabI. Nucleic acids encoding the enoyl reductases, the enoyl reductases, and antibodies for the enoyl reductases are also included. Methods are also provided for identifying agents that can act to prevent and/or treat bacterial infections.